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UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001
November 9, 2001

MEMORANDUM TO: ACRS Members

FROM: *Noel Dudley*
Noel Dudley, Senior Staff Engineer
ACRS

SUBJECT: CERTIFICATION OF THE SUMMARY/MINUTES OF THE ACRS
SUBCOMMITTEE MEETING ON THE SAFETY EVALUATION
REPORT RELATED TO THE LICENSE RENEWAL APPLICATION
FOR HATCH UNITS 1 AND 2, OCTOBER 25, 2001 ROCKVILLE,
MARYLAND

The minutes of the subject meeting, issued on October 30, 2001, have been certified as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc via e-mail:
J. Larkins
S. Bahadur
ACRS Fellows and Technical Staff

cc: ACRS Secretary
E. Barnard (3 copies)

Hatch

Issued: 10/30/01
Certified: 11/8/01

CERTIFIED

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF ACRS SUBCOMMITTEE MEETING ON
PLANT LICENSE RENEWAL
HATCH UNITS 1 AND 2
OCTOBER 25, 2001
ROCKVILLE, MARYLAND

The ACRS Subcommittee on Plant License Renewal held a meeting on October 25, 2001, at 11545 Rockville Pike, Rockville, Maryland, in Room T-2B3. The purpose of the meeting was to hold discussions with representatives of the NRC staff and Southern Nuclear Operating Company, Inc., (SNC) concerning the open and confirmatory items identified in the safety evaluation report (SER) related to the license renewal of the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The meeting was convened at 8:30 a.m. on October 25, 2001, and adjourned at 11:50 a.m. on the same day.

ATTENDEES:

ACRS

M. Bonaca, Chairman
P. Ford, Member
T. Kress, Member

W. Shack, Member
J. Barton, Consultant
N. Dudley, ACRS Staff

NRC STAFF

C. Grimes, NRR
J. Nakoski, NRR
J. Davis, NRR

T. Eaton, NRR
C. Carpenter, NRR
W. Burton, NRR

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

R. Baker, SNC
C. Pierce, SNC

M. MacFarlane, SNC
R. Dyle, SNC

There were no written comments or requests for time to make oral statements received from members of the public. Approximately four members of the public attended the meeting. A list of meeting attendees is available in the ACRS office files.

ACRS SUBCOMMITTEE CHAIRMAN'S INTRODUCTION

Dr. Mario Bonaca, Chairman of the Plant License Renewal Subcommittee, convened the meeting, introduced the ACRS members and consultant, and stated that the purpose of the meeting was to discuss the staff's final SER related to the license renewal of Edwin I. Hatch Nuclear Plant, Units 1 and 2. He noted that the Subcommittee reviewed the SER with open items on March 28, 2001, and that the Committee issued a letter to Dr. William Travers, Executive Director for Operations, concerning the SER on April 16, 2001. He called upon Mr. Christopher Grimes, NRR, to begin.

RESOLUTION OF SAFETY EVALUATION REPORT (SER) OPEN ITEMS

Introduction: Mr. Christopher Grimes and Mr. William Burton, NRR

Mr. Grimes thanked the Subcommittee for reviewing the final SER and introduced the NRR staff members who would be making the presentation. Mr. Grimes explained that he would have to leave to attend another meeting and expected the staff to fully understand any issues that the Subcommittee members raised so that the issues could be addressed at the November 8, 2001 ACRS meeting session.

Mr. Burton provided an overview of the staff's review of the Hatch license renewal application and highlighted the staff's review schedule. He discussed each of the following 13 open items that were resolved without appeal and explained the basis for the staff's closure of the items.

Open Item 2.3.3.2-1: Screening of Skid-Mounted Components

The applicant agreed to include additional skid-mounted components associated with the emergency diesel generators and hydrogen recombiners in the scope of license renewal and to identify appropriate aging management programs.

Dr. Bonaca, ACRS, noted that this issue had been resolved during the staff's review of previous applications and asked how the staff's position would be clarified for future applicants, so that it would not be contested in future license renewal applications. Mr. Burton explained that the staff had not resolved this item at the time the Hatch application was submitted and reviewed. He noted that future applicants will have the benefit of SER writeups from this application.

Open Item 2.3.4.2-2: Fire Suppression in Radwaste Building

The licensee brought the fire suppression system in scope and identified appropriate aging manage programs.

Open Item 3.01: FSAR Supplement

This standard open item was closed based on two license conditions.

The Subcommittee members, the staff, and SNC discussed how the NRC will verify that license renewal commitments are completed. Mr. Raymond Baker, SNC, explained that the license renewal commitments are captured in a licensee commitment tracking system that is used to write the FSAR supplement. The FSAR supplement is required to be incorporated into the next updated of the FSAR. Mr. John Barton, ACRS, questioned whether the commitment tracking system was maintained to the same requirements as the 10 CFR Part 50 Appendix B corrective action program. Mr. Baker stated that the commitment tracking system was different from the corrective action program, but was maintained to Appendix B requirements. Mr. John Nakoski, NRR, stated that the staff's post-license inspection plan included guidance for verifying completion of license renewal commitments.

Open Item 3.1.1-1: BWR Water Chemistry Guidelines

The applicant will maintain flexibility to modify the water chemistry procedures in response to new or updated industry information.

Dr. Ford questioned how the staff could approve use of revision 2 to the Electric Power Research Institute (EPRI) TR-103515, "BWR Water Chemistry Guidelines," before it had completed its review. Mr. Robin Dyle, SNC, stated that revision 2 provided more implementation guidance than revision 1. He explained that the applicant had provided a description of the differences between the revisions to the staff. Mr. Burton explained that the staff had reviewed and approved two revision 2 requirements, which were different than revision 1 requirements, for use at Hatch.

Open Item 3.1.3-1: Emergency Diesel Generator Fuel Oil Testing

The applicant conducted a one-time inspection of one of four emergency diesel generator (EDG) fuel oil storage tanks. The condition of the fire pump fuel oil storage tanks are assumed to be bounded by the condition of the EDG fuel oil storage tanks.

Mr. Barton, ACRS, pointed out that the one time inspection only inspected the tank's inside surface, asked how the staff could conclude that there was no corrosion in the buried fuel oil tanks based on one inspection, and recommended additional inspections. He raised concerns about corrosion aging due to degradation of the external coating. Mr. Burton replied that there was no operational experience of fuel oil tank leakage. He also noted that licensee procedures require inspection of any components that are excavated in the future. The Subcommittee members, the staff, and SNC discussed the consequences of fuel oil tank leakage and the effect on plant safety, loss of safety functions, and regulatory requirements.

Mr. Burton stated that he would consider revising the SER to clarify the expectations for future tank inspections and for considering future operating experience.

Open Item 3.1.11-1: Stress Corrosion Cracking of High-Strength Bolting

The licensee's procurement data does not identify the yield strength upper limit for high-strength bolts. Plant-specific and industry operating experience indicates that stress corrosion crack is not a problem for these bolts.

The Subcommittee members, the staff, and SNC discussed why the bolts are not subject to cracking, type of lubricant applied to the bolts, and the upper torque limit for the bolts. Mr. Burton stated that he would consider revising the SER to include additional information provided in the applicant's responses to requests for additional information.

Open Item 3.1.13-1: Service Water Systems Inspection Program

The site procedures require that coating personnel perform inspections during any excavation of buried components. The management of aging effects on heat exchangers is performed in accordance with the residual heat removal heat (RHR) exchanger augmented inspection and

testing program, and visual inspections are performed in accordance with the primary service water (PSW) and RHR service water inspection program. The licensee will perform a one-time inspection of the PSW guard pipe at the next refueling outage.

The licensee verified that the inspection of the guard pipe was scheduled for the upcoming outage.

Open Item 3.1.17-1: Reactor Vessel Monitoring Program

A licensing condition requires that the licensee informs the staff as to which surveillance program will be used to inspect the reactor vessel.

Open Item 3.1.18-1: Fire Protection

System flow tests are adequate to manage aging in fire system components. The provisions of the National Fire Protection Act (NFPA) Code 25 will be implemented.

The Subcommittee members, the staff, and SNC discussed the flow test, how it is conducted, and how the results are used to evaluate aging effects on the sprinkler heads. Ms. Tanya Easton, NRR, explained that the Code requires inspecting the fire suppressions system after 50 year from the date of installation of the system and not the date of the operating license. Dr. Bonaca suggested that the staff clarify, in the FSAR, when the flow test would be done with respect to the expiration of the operating license. The test is required to be performed three years into the license renewal period.

Dr. Peter Ford questioned what corrosion data was used to establish the required frequency of the tests. Dr. Davis, NRR, explained that the NFPA Code 25 had been developed based on operating experience for fire suppression systems used in commercial industries. Dr. Thomas Kress, ACRS questioned whether the equipment protection criteria used for commercial fire suppression systems was adequate for nuclear power facilities. The staff agreed to respond to this issue at the November 2001 ACRS meeting.

3.1.28-1: Residual Heat Removal System Heat Exchanger Inspection and Testing

The applicant provided addition information concerning inspection methods, frequencies, locations, and acceptance criteria. On the basis of Subcommittee members' questions, the staff agreed to clarify the SER by including additional information from the licensee's response to requests for additional information concerning the safety margin and surveillance frequency for testing of small bore pipes.

Open Item 3.2.3.1.1-1: Loss of Fracture Toughness of CASS Components in Reactor Assembly System

Plant and industry experience has not shown evidence of cracking and indicates that weld cracks will form before cast austenitic stainless steel (CASS) components fail. The Subcommittee members, the staff, and SNC discussed the basis for using cracks in welds as a precursor to failure of CASS components.

Open Item 3.6.3.2-1: Primary Containment

The applicant identified the aging management programs that are credited to manage torus corrosion, and clarified the requirements and criteria for containment leakage. The Subcommittee members and the staff discussed the aging management programs for components above the torus water line and components below the waterline.

Open Item 4.1.3-1(a): Fatigue Analyses

The cumulative usage factor will remain below 1.0 during the renewal term.

Open Items that Were Appealed

Mr. Burton explained the appeals process and the basis for closure of the following items:

- 2.1.3.1-1: Scoping of Seismic II/I Components
- 2.3.3.2-1: Aging Management Review for Active Component Housing
- 3.2.3.2.3-1: Aging Management of Small-Bore Piping
- 3.6.3.1-1: Reactor Building Controlled In-Leakage
- 4.1.3-1(b): Pipe Break Criteria as a Time-Limiting Aging Analysis (TLAA)
- 4.2.3-1: Environmentally-Assisted Fatigue

The Subcommittee members and the staff discussed why this formal appeal system is needed since this process is used for any technical difference between the staff and licensees. Dr. Kress verified that NRC technical reviewers would be able to use the differing professional opinion process if they disagreed with the results of the appeals process.

The Subcommittee members and SNC discussed why the applicant used the appeal process for specific open items. Dr. William Shack, ACRS, questioned why postulated pipe break locations were only based on fatigue cackling. The staff agreed to address the issue at the November 2001 ACRS meeting.

The Subcommittee members and the staff discussed chemistry control for oxygen in the primary coolant. The staff agreed to clarify the discussion of oxygen control contained on page 3-62 of the SER.

Licensing Conditions

Mr. Burton presented the following three licensing conditions:

- include FSAR supplement in next FSAR updated required by 10 CFR 50.71 (e),
- complete all future actions before start of extended period of operation, and
- inform NRC of the surveillance program that will be used to inspect the reactor vessel.

Mr. Burton concluded that the applicant has met the requirement for license renewal as required by 10 CFR 54.29.

SUBCOMMITTEE COMMENTS, CONCERNS, AND RECOMMENDATIONS

Mr. Barton stated that he had no recommendations for items to be addressed in the ACRS letter.

Dr. Kress stated that the license renewal review process was sufficient. He was concerned that the appeals process may be used to override technical reviewers' conclusions.

Dr. Bonaca noted that the BWR Vessel and Internals Project programs and the TLAAs are integrated. He questioned why the appeals process needed to be formalized.

Dr. Ford questioned the justification for using one-time inspections to verify the absence of time related aging degradation, such as, corrosion in buried tanks. He also questioned the assumption that weld cracks will be precursors to CASS component failures.

Dr. Shack stated that the staff SER made the case for approval of the license renewal application.

STAFF AND INDUSTRY COMMITMENTS

The staff agreed to provide addition clarification in the final SER concerning the following:

- staff expectations for the license to conduct future inspections and consider new operating experience related to leakage of buried components,
- licensee's commitments related to stress corrosion cracking of high-strength bolting,
- the timing of fire sprinkler head inspections in relationship to the operating license,
- licensee responses to request for additional information concerning the acceptance criteria and safety margins related to RHR heat exchanger inspections and testing, and
- description of the control of oxygen in the flow accelerated corrosion program's preventive and mitigative actions.

SUBCOMMITTEE DECISIONS

The Subcommittee requested that the staff present an abbreviate version of its presentation regarding the SER to the ACRS on November 8, 2001.

The Subcommittee requested that the staff, during its presentation on November 8, 2001, address the following specific issues:

- requirements for inspecting buried components in relationship to safety functions;
- applicability of the National Fire Protection Act (NFPA) Code 25 to nuclear power plants;
- how the staff verifies that SER commitments are completed;

- why postulated pipe breaks are based only on pipe fatigue analysis;
- number of existing, modified, and new aging management programs;
- treatment of technical issues in the appeals process;
- weld cracks used as a precursor to failure of CASS components,
- why postulated pipe break locations are based on fatigue cackling,
- justification for one-time inspections for time-dependent degradation; and
- update on the status of approval of topical reports associated with license renewal.

FOLLOW-UP ACTIONS

None.

PRESENTATION SLIDES AND HANDOUTS PROVIDED DURING THE MEETING

The presentation slides and handouts used during the meeting are available in the ACRS office files or as attachments to the transcript.

BACKGROUND MATERIAL PROVIDED TO THE SUBCOMMITTEE:

1. Letter dated April 16, 2001, from George E. Apostolakis, Chairman ACRS, to William D. Travers, Executive Director for Operations, NRC, Subject: Interim Letter Related to the License Renewal of Edwin I. Hatch Nuclear Station, Units 1 and 2.
2. US Nuclear Regulatory Commission Safety Evaluation Report Related to the License Renewal of the Edwin I. Hatch Nuclear Plant, Units 1 and 2, issued October 2001.
3. Letter from H.L. Sumner to the U.S. Nuclear Regulatory Commission, "Edwin I. Hatch Nuclear Plant Application for Renewed Operating Licenses," dated February 29, 2000.

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NOTE: Additional details of this meeting can be obtained from a transcript of this meeting available in the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, MD, (301) 415-7000, downloading or viewing on the Internet at "http://www.nrc.gov/ACRSACNW," or can be purchased from Neal R. Gross and Co., 1323 Rhode Island Avenue, NW, Washington, D.C. 20005, (202) 234-4433 (Voice), 387-7330 (Fax), e-mail: nrgross@nealgross.com.

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